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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/597,998 | 06/18/2007 | Ian Graham | 638001-07020 | 8940 |

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| EXAMINER |
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MCELWAIN, ELIZABETH F

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| ART UNIT | PAPER NUMBER |
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1638

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| MAIL DATE | DELIVERY MODE |
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08/03/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--|--------------------------------------|--|
| Office Action Summary | Application No. 10/597,998 | Applicant(s) GRAHAM ET AL. | |
| | Examiner Elizabeth F. McElwain | Art Unit 1638 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-41 is/are pending in the application.
- 4a) Of the above claim(s) 24,33-37 and 39-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-23,25-32 and 38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

The amendment filed May 21, 2010 has been entered.

Election/Restrictions

1. Applicant's election without traverse of Group I and SEQ ID NO: 9 in the reply filed on May 21, 2010 is acknowledged.
2. Claims 19-41 are pending.
3. Claims 19-23, 25-32 and 38 are drawn to the elected invention of Group I and SEQ ID NO: 9.
4. Claims 24, 33-37 and 39-41 are withdrawn as drawn to a non-elected invention.

Claim Objections

Claims 19, 22 and 38 are objected to for reciting non-elected sequences. Deletion of the non-elected sequences is requested.

Claim 23 is objected to for the recitation of "any of claim 19", since it only depends on the one claim. Amendment of the claim to delete "any of" would overcome the rejection.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 19-21, 23, 26-32 and 38 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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7. Claim 19 and claims 20, 21, 23, 26-32 and 38 are indefinite in claiming a polynucleotide that “hybridizes under stringent hybridization conditions”, given that “stringent hybridization” can refer to a wide range of conditions and the polynucleotide sequences encompassed by the claims would vary with different hybridization conditions. However, the specification does not define what hybridization conditions are intended by this phrase. Therefore, the metes and bounds of the claimed invention are not clearly set forth and it remains unclear what polynucleotide sequences are encompassed by the claims.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 19-21, 23, 26-32 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Zank et al (US PGPub 20080155705 A1).

10. The claims are drawn to a transgenic cell comprising a polynucleotide sequence which hybridizes under stringent hybridization conditions with SEQ ID NO: 9. It is noted that no definition for stringent hybridization conditions has been provided.

11. Zank et al teach the nucleotide sequence SEQ ID NO: 97 from *Thalassiosira* that is identical to 1355 contiguous nucleotides of SEQ ID NO: 9 and encodes a polypeptide having delta-6 desaturase activity, wherein said polynucleotide would hybridize under stringent

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hybridization conditions to SEQ ID NO: 9 (paragraphs [0046], [0060] and Table 1, also see attached sequence alignment). Zank et al also teach vectors comprising genetic control elements, such as promoters, operably linked to said coding sequence (paragraph [0096], for example) and transforming cells and producing plants and seeds comprising said delta-6 desaturase coding sequence (paragraphs [0101] to [0105]).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 19-23, 25-32 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zank et al (US PGPub 20080155705 A1).

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15. The claims are drawn to a transgenic cell comprising a polynucleotide sequence which hybridizes under stringent hybridization conditions with SEQ ID NO: 9. It is noted that no definition for stringent hybridization conditions has been provided.

16. Zank et al teach the nucleotide sequence SEQ ID NO: 97 from *Thalassiosira pseudonana* that is identical to 1355 contiguous nucleotides of SEQ ID NO: 9 and encodes a polypeptide having delta-6 desaturase activity, wherein said polynucleotide would hybridize under stringent hybridization conditions to SEQ ID NO: 9 (paragraphs [0046], [0060] and Table 1, also see attached sequence alignment). Zank et al also teach vectors comprising genetic control elements, such as promoters, operably linked to said coding sequence (paragraph [0096], for example) and transforming cells and producing plants and seeds comprising said delta-6 desaturase coding sequence (paragraphs [0101] to [0105]).

17. Zank et al do not teach the full nucleotide sequence of SEQ ID NO: 9.

18. Given the recognition of those of ordinary skill in the art of the value of a delta-6 desaturase coding sequence from *Thalassiosira pseudonana* for the purpose of modifying fatty acid composition in a cell, plant or seed, as taught by Zank et al, it would have been obvious to one of ordinary skill in the art to use the nucleic acid sequence of SEQ ID NO: 97 taught by Zank et al, and it would have been obvious to identify the same sequence with additional non-coding sequences by known methods of cloning and nucleic acid hybridization, and the simple substitution of one nucleic acid sequence that encodes a polypeptide for another nucleic acid sequence that encodes the same polypeptide would be an obvious matter of choice. Thus the claimed invention would have been prima facie obvious as a whole at the time it was made, especially in the absence of evidence to the contrary.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth F. McElwain whose telephone number is (571) 272-0802. The examiner can normally be reached on increased flex time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EFM

/Elizabeth F. McElwain/
Primary Examiner, Art Unit 1638

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